

Patent Claims

1. Laser-markable flexible support unit, characterised in that it consists of an inner flexible support layer and one or more flexible outer laser-inactive support layers which can be or are separated from one another, where the inner layer comprises one or more laser-sensitive pigments or additives.
2. Laser-markable flexible support unit according to Claim 1, characterised in that the inner support layer comprises, as laser-sensitive pigment or additive, anthracene, pentaerythritol, copper phosphates, copper hydroxide phosphates, molybdenum disulfide, antimony(III) oxide, bismuth oxychloride, phyllosilicates, glass flakes, SiO₂ flakes, metal-oxide flakes, conductive pigments, holographic pigments, pearlescent pigments, antimony-doped tin oxide, coated graphite flakes or mixtures thereof.
3. Laser-markable flexible support unit according to Claim 2, characterised in that the phyllosilicate is natural or synthetic mica, kaolin or talc.
4. Laser-markable flexible support unit according to Claim 2, characterised in that the pearlescent pigment is based on mica flakes, SiO₂ flakes, Al₂O₃ flakes, Fe₂O₃ flakes or glass flakes.
5. Laser-markable flexible support unit according to Claim 2, characterised in that the pearlescent pigment is a TiO₂-coated mica pigment.
6. Laser-markable flexible support unit according to Claim 3, characterised in that the conductive pigment is an (Sn,Sb)O₂-coated flake-form substrate.
7. Laser-markable flexible support unit according to one of Claims 1 to 6, characterised in that the proportion of laser-sensitive pigment and/or

additive in the inner support layer is from 0.05 to 10% by weight, based on the support layer or based on the laser-doped surface layer of the support layer.

- 5 8. Laser-markable flexible support unit according to one of Claims 1 to 7, characterised in that the support unit consists of plastic.
9. Laser-markable flexible support unit according to Claim 8, characterised in that the plastic is a thermoplastic or a thermoset.
- 10 10. Laser-markable flexible support unit according to Claim 8 or 9, characterised in that the plastic consists of polyethylene, polypropylene, polyamide, polyester, polyester-ester, polyether-ester, polyphenylene ether, polyacetal, polybutylene terephthalate, polymethyl methacrylate, polyvinyl acetal, polystyrene, acrylonitrile-butadiene-styrene (ABS), acrylonitrile-styrene-acrylate (ASA), vinyl acetate, polycarbonate, polyether sulfones and polyether ketones, as well as copolymers and/or mixtures thereof.
- 15 11. Process for the inscription and marking of a flexible support unit consisting of an inner laser-markable flexible support layer and one or more flexible outer laser-inactive support layers which can be or are separated from one another, characterised in that a laser-sensitive pigment and/or additive is incorporated into the inner support layer or applied to the surface, and the laser inscription of the inner support layer is carried out through the outer support layers, but only the inner layer is marked.
- 20 12. Process for the inscription and marking of a laser-markable flexible support unit according to Claim 11, characterised in that a CO₂ or Nd:YAG laser is used.
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13. Laser-markable flexible plastic support unit inscribed and marked by the process of Claim 11.

5 14. Laser-markable flexible support unit according to Claim 13 characterised in that it consists of double sacks or multilayered films which are not bonded to one another over the entire area.

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